

METHOD AND SYSTEM FOR INCREASING A NUMBER OF INFORMATION
CHANNELS CARRIED BY OPTICAL WAVEGUIDES

ABSTRACT

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An optical add/drop multiplexing (OADM) device can increase the number of information channels carried by an optical waveguide by utilizing different wavelength regions of light. In other words, each information channel can be assigned a specific wavelength region of light. The OADM device can add additional virtual optical waveguides equal to the number of wavelength regions of light that can be efficiently propagated along a single optical waveguide. The OADM device can utilize conventional diode laser technology for adding information channels at predefined wavelength regions into an optical network. The OADM device can stabilize the output wavelength region of a conventional laser diode to any specific wavelength region with minimal hardware or structural modifications. By utilizing off the shelf hardware, the OADM device can lower manufacturing costs while providing an ample supply of spare parts. Further, the OADM device can be used to amplify optical signals that propagate along the improved optical networks of the present invention. The OADM device can be easily interfaced with terminals designed for Synchronous Optical NETWORKS (SONETs). Also, the OADM device permits functionality of a conventional optical network to remain the same or constant. The OADM device employs cascading and planar light guide circuits to minimize hardware and to reduce signal losses.

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